

MINILAPAROTOMY AND OVARIAN DIATHERMY DRILLING FOR CLOMIPHENE RESISTANT POLY CYSTIC OVARIAN DISEASE

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Background: This study was carried out to determine the effectiveness and safety of minilaparotomy and ovarian drilling for sub fertile women with clomiphene resistant polycystic ovarian syndrome. **Methods:** During a 2 year period (August 2000 to August 2002) 16 patients with polycystic ovarian disease were managed by minilaparotomy and ovarian drilling by diathermy. All the patients underwent full infertility workup and then treated with cyclical clomiphene citrate for 6 months. **Results:** Six patients (37.5%) presented in age group 15–25 years. Eight patients (50.0%) were in age group 26–35 years. Only 2 (12.5%) patients presented in age group 36–44 years. Eleven (68.75%) patients had primary infertility. Five (31.25%) patients presented with secondary infertility. After treatment and 6 months follow up, ovulation occurred in 14 (87.5%) patients. Eleven (68.75%) women conceived pregnancy. **Conclusion:** Ovarian drilling is a powerful tool in the treatment of polycystic ovarian disease.

Key Words: Polycystic ovarian Syndrome, Ovarian hyper stimulation syndrome, wedge resection, ovulation induction.

INTRODUCTION

Polycystic ovarian syndrome (PCOS) is a clinical state associated with chronic anovulation and infertility. Its prevalence is estimated at about 5%.¹ Ovulation stimulating drugs are widely used to overcome infertility problems in these patients.²

Problem in inducing ovulation in women with polycystic ovarian disease are well recognised. Some new therapeutic techniques have been introduced, diathermy or laser vaporization of the ovary through a laparoscopic approach which may lead to ovulation and pregnancy.

Surgical ovarian wedge resection was the first established treatment for anovulating PCOS patients but was largely abandoned because of the risk of post surgical adhesions formation.³ It was replaced by medical ovulation induction (clomiphene citrate, gonadotrophin). However patients with PCOS treated with gonadotrophins often have a polyfollicular response and are exposed to risk of ovarian hyperstimulation syndrome and multiple pregnancy.⁴ Although effective, it is an expensive, stressful and time consuming form of treatment, requiring intensive monitoring. A new surgical therapy, laparoscopic ovarian drilling may avoid or reduce the need for gonadotrophins induction of ovulation.

Laparoscopic surgery requires expensive equipment and long training period. Laparoscopic surgical equipment is not widely available in Pakistani hospitals and also trained people for laparoscopic surgery are only few.

In order to overcome the above mentioned problems, we devised a new technique of ovarian diathermy/drilling by minilaparoscopy procedure. It is quick, very safe, complications of laparoscopy (gas embolization, bowel, vessels and bladder injuries) can be avoided. This study was carried out to determine the effectiveness and safety of minilaparotomy and ovarian drilling for sub fertile women with clomiphene resistant polycystic ovarian syndrome.

MATERIAL AND METHODS

It was a clinical trail of 16 patients with PCOS who had to respond to ovulation stimulation with clomiphene citrate for 6 months. All patients had oligomenorrhea with or without hirsutism, primary or secondary infertility, with

ultrasonic features of polycystic ovaries. Bio-chemically all had an LH/FSH ratio >3 . All of them failed to conceive after 6 months of treatment with clomiphene citrate. In all, fallopian tubes were patent, proved by HSG and laparoscopy. Their husbands had normal semen analysis and no obvious cause of infertility apart from anovulation was found.

All the patients had undergone minilaparotomy and electro diathermy of the ovaries. Then the fertility rate and menses regularity surged during 6 months follow up.

This study was conducted in Gynaecology A and B Units of Ayub Teaching Hospital, Abbottabad from August 2000 to August 2002.

After giving anaesthesia, patients were cleaned and draped. 2-3 cm suprapubic transverse incision was given. Abdominal walls were retracted with Langhanbach's retractors. Ovaries were held with Babcock's forceps and drawn out of the small wound. Eight to ten holes, each 2-4mm deep on the surface and stroma of each ovary using a unipolar diathermy were made. Abdomen was then closed.

RESULTS

14 out of 16 patients ovulated within 6 months of ovarian drilling. Eleven patients conceived during 6 months follow up, with pregnancy rate of about 68.75%. The greatest success rate being in women with shorter length of infertility, patients who were young and had secondary infertility.

6 (37.5%) were between age 15-25 years. 8 (50.0%) were between 26-35 years. Only 2 (12.5%) presented in age group 36-44.(Table-1)

Eleven (68.75%) patients presented with primary infertility while secondary infertility was found in 5 (31.25%) patients.(Table-2)

Total hospital stay was around 24-48 hours. Post operative recovery in majority of the patients was uneventful.

Ovulation rate was around 90% and conception rate of around 70%, which is comparable to most of the studies where laparoscopy and ovarian diathermy was used as surgical method to treat clomiphene resistant PCOS.

Procedure is simple, there is less post-operative pain, quick post-operative recovery and patient can go home in 24-48 hours.

Table-1: Distribution according to Age

Age (years)	No. of Cases	Percentage
15-25	6	37.5%
26-35	8	50.0%
36-44	2	12.5%

Table 2: Distribution According to Infertility Status

Parity	No. of Cases	Percentage
Primary Infertility	11	68.75%
Secondary Infertility	5	31.25%

All (100%) patients presented with oligomenorhea. Excessive weight gain was found in 11 (68.75%). Abnormal hair growth was present in 13(81.25%) women, while 6(37.5%) patients presented with acne. (Table 3)

Table-3: Distribution according to presenting complains

Clinical Features	No. of Cases	Percentage
Oligo menoerhea	16	100
Weight gain	11	68.75
Hirsutism	13	81.25
Acne	6	37.5

Table-4: Outcomes of Treatment

Outcome of treatment	No. of Cases	Percentage
Ovulation rate	14	87.5
Conception rate	11	68.75

DISCUSSION

In 1930, before we had a good understanding of hypothalamic-pituitary-ovarian axis, before the radioimmunoassay concept, and before the presence of drugs for ovulation induction, Stein and Leventhal described the classic syndrome which bears their names.⁵ Over the next 35 years surgical treatment in the form of wedge resection was the accepted

treatment of polycystic ovarian syndrome. In his series of 108 patients, Stein reported a pregnancy rate of 85%.⁵ In another series, pregnancy rate was lower and since then the efficacy of wedge resection has been questioned.

Wedge resection can lead to periovarian and peritubal adhesions and iatrogenic infertility due to tubal blockage.⁶

Laparoscopic ovarian diathermy or laser has been replaced now-a-days by wedge resection as surgical modality.⁷ Laparoscopic equipment is expensive and is not widely available in Pakistan. There is long learning curve for laparoscopic surgery. Moreover, complications rate of laparoscopic surgery (bowel injury, injury to retroperitoneal large vessels and injury to ureters and urinary bladder) is about 1:1000.⁸

Ovarian drilling is a powerful tool in the treatment of polycystic ovarian disease. Treatment with clomiphene citrate remains first line treatment for anovulatory infertility associated with this disease.⁹ Laparoscopic ovarian drilling should probably become second line treatment for those with clomiphene resistant disease. Where laparoscopic equipment and expertise are not available, same procedure can safely be performed by minilaparotomy. Ovarian diathermy and laser drilling has a number of benefits. These include no danger of multiple gestation⁷, elimination of risk of ovarian hyperstimulation by gonadotrophin therapy, no requirement for intensive monitoring, a potentially lower rate of miscarriage and finally lower cost of operation compared with gonadotrophin therapy.

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